

Carlsbad Caverns National Park: An Overview

Located in the Northeastern Chihuahuan Desert of the Guadalupe Mountains in the State of New Mexico, Carlsbad Caverns National Park is one of the wonders of the natural world. The cavern's story begins during the Earth's Permian Age, when the 10,000-square-mile Permian Sea covered parts of what is now Kansas, Oklahoma, Texas and New Mexico, and extended into Mexico. The warm waters of the shallow sea teemed with tiny sponges and algae. As the marine organisms died and settled to the bottom of the sea, a 400-mile-long, horseshoe-shaped reef, today called the Capitan Reef, was formed along its shore. Part of that reef can be seen in the cliffs of the Guadalupe Mountains. Over vast periods of time, lime and calcite precipitation from the calcium-rich water facilitated the growth of the 1800-foot thick reef.

Gradually drying, the sea became increasingly salty, killing off the marine life, and was buried under thousands of feet of gypsum and salt. Tectonic activity caused uneven uplift in the area. Erosion and uplift exposed parts of the 400-mile reef once again. As the reef rose, rainwater combined with slightly acidic soil and air, seeped down into cracks that formed in the reef. The water and acid dissolved the limestone and began the process of carving out of the subterranean chambers of Carlsbad Caverns.

Speleothem formation began after the water subsided, the chambers filled with air and carbonic acid seeped downward, dissolving tiny bits of limestone. When the acid-laden droplets reached the chambers, carbon dioxide was released, reducing the acidity and the capacity of the water to retain its calcium carbonate in solution. A minuscule amount of new limestone was then deposited on the ceiling, wall or floor of the chamber. The growth rate of these formations varies, depending on water supply, flow rate, acidity, and other dissolved minerals in the water.

Carlsbad Caverns has been inhabited and used by indigenous people for thousands of years as a source of shelter and primal wonder. Pictographs and petroglyphs give hints of the spiritual significance of the caves to archaic hunter-gathers, such as the Mogollon. Comanche, Pueblo, and most significantly, the Mescalero Apache peoples have used the cave. Left behind, and found in the park today, are the mescal pits (midden rings) used by the Mescalero to prepare the heart of the agave and sotol plants.

Many years later, in 1898, a teenager named Jim White was building fences when he saw what he thought was a huge column of smoke. Curiosity drew him closer. The *smoke*, in reality, was bats. And the hole they flew from was Carlsbad Cavern. That evening encounter with bats changed his life forever. The cave became his passion and obsession. He worked for guano mining operations that sold the bat droppings for fertilizer in California citrus orchards, giving him opportunities to explore after work hours.

Jim White generated enough political interest in the cave to convince government officials that the cave's beauty and splendor should be protected and preserved. On October 25, 1923, President Calvin Coolidge proclaimed Carlsbad Caverns a National Monument. Guano mining ceased and Jim White became the cavern's first official tour guide. Immediately he and others began making the cave more hospitable to visitors. Trails, lights, a telephone and an underground lunchroom were added. In 1930, the unit was re-designated a National Park. Two years later the first elevator to the Big Room was running and visitors had the added comfort of flushing toilets. Stone, later adobe, and finally stucco houses were constructed for the park's employees.

The Chihuahuan Desert is one of the four deserts on the North American continent. It runs deep into the State of Chihuahua in Mexico, and covers parts of Texas and New Mexico. At the northern tip of the Chihuahuan Desert lies Carlsbad Caverns National Park's 47,000 acres. The park provides unparalleled opportunities to see southwestern wildlife, desert plants, majestic limestone mountains and hidden caves. To date, there are over 90 known caves in the park.

The park is characterized by its relatively high elevations, cool dry winters, hot wet summers and showy desert plants including agaves, yuccas, cacti, sotols and ocotillos. Many of the 800 plants species found in the park are at the edge of their geographical distribution, including several threatened and endangered species. More than 330 bird species have been recorded within the park. Most noticeable are the circling turkey vultures, but also recorded within the park boundaries are 37 different warblers. The cavern supports the northernmost and largest colony of cave swallows in the United States. Mammal diversity is equally impressive, with 76 species including mule deer, rock squirrel, ringtail, Mexican free-tailed bat and mountain lion.

Today some of the distinguishing features and resources of Carlsbad Caverns National Park are in jeopardy. These threats require monitoring of ecological conditions and application of science-based management to prevent further resource degradation. Existing data and new information is continuously integrated into resource stewardship efforts.